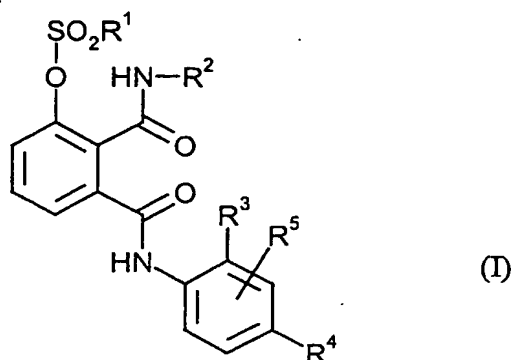


Patent Claims

1. Phthalamide derivatives represented by the formula (I)



5 wherein

- R¹ represents alkyl which may be optionally halogen-substituted,
 R² represents alkyl which may be optionally substituted or cycloalkyl which may be optionally substituted,
 R³ represents hydrogen atom, halogen, or alkyl which may be optionally
 10 halogen-substituted,
 R⁴ represents hydrogen atom, halogen-substituted alkyl, halogen-substituted alkoxy, halogen-substituted phenyl, or halogen-substituted phenoxy, and
 R⁵ represents hydrogen atom, halogen, or alkyl which may be optionally
 15 halogen-substituted.

2. The compounds set forth in Claim 1, wherein

- R¹ represents C₁₋₆ alkyl which may be optionally fluoro-substituted, chloro-substituted or bromo-substituted,
 20 R² represents C₁₋₆ alkyl which may be optionally fluoro-substituted, chloro-substituted, bromo-substituted, C₁₋₄ alkoxy-substituted, C₁₋₄ alkylthio-substituted, C₁₋₄ alkylsulfinyl-substituted, or C₁₋₄ alkylsulfonyl-substituted, or represents C₃₋₆ cycloalkyl which may be optionally halogen-substituted or C₁₋₄ alkyl-substituted,

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R³ represents hydrogen atom or halogen, or represents C₁₋₆ alkyl which may be optionally fluoro-substituted, chloro-substituted or bromo-substituted,

R⁴ represents hydrogen atom, halogen-substituted C₁₋₆ alkyl, halogen-substituted C₁₋₆ alkoxy, halogen-substituted phenyl, or halogen-substituted phenoxy, and

R⁵ represents hydrogen atom or halogen, or represents C₁₋₆ alkyl which may be optionally fluoro-substituted, chloro-substituted or bromo-substituted.

3. Compounds set forth in Claim 1, wherein

R¹ represents methyl, ethyl, propyl or trifluoromethyl,

R² represents methyl, ethyl, n-propyl, isopropyl, n-butyl, isobutyl, sec-butyl, tert-butyl, n-pentyl, isopentyl, sec-pentyl, tert-pentyl, n-hexyl, isohexyl, sec-hexyl, methylthiomethyl, ethylthiomethyl, methylthioethyl, ethylthioethyl, methylthiopropyl, ethylthiopropyl, methylthiobutyl, ethylthiobutyl, methylthiopentyl, ethylthiopentyl, methylsulfinylmethyl, ethylsulfinylmethyl, methylsulfinylethyl, ethylsulfinylethyl, methylsulfinylpropyl, ethylsulfinylpropyl, methylsulfinylbutyl, ethylsulfinylbutyl, methylsulfinylpentyl, ethylsulfinylpentyl, methylsulfonylmethyl, ethylsulfonylmethyl, methylsulfonylethyl, ethylsulfonylethyl, methylsulfonylpropyl, ethylsulfonylpropyl, methylsulfonylbutyl, ethylsulfonylbutyl, methylsulfonylpentyl, ethylsulfonylpentyl, or represents cyclopropyl, cyclobutyl, cyclopentyl or cyclohexyl, each of which may be optionally substituted with fluoro, chloro, bromo, methyl or ethyl,

R³ represents hydrogen atom, fluoro, chloro, bromo, methyl, ethyl or trifluoromethyl,

R⁴ represents fluoro, chloro or bromo, or represents methyl, ethyl, n-propyl, isopropyl, n-butyl, isobutyl, sec-butyl, tert-butyl, methoxy, ethoxy, n-propoxy or isopropoxy, each of which may be optionally

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partially substituted with at least one fluoro, perfluoro-substituted, or substituted with at least one fluoro and 1 or 2 chloro,

R^5 represents hydrogen atom, fluoro, chloro or bromo, or represents methyl or ethyl, each of which may be optionally fluoro-substituted or chloro-substituted.

4. Compounds set forth in Claim 1, wherein

R^1 represents methyl or ethyl,

R^2 represents isopropyl, tert-butyl, 1-methyl-2-(methylthio)ethyl, 1,1-dimethyl-2-(methylthio)ethyl, 1-methyl-2-(methylsulfinyl)ethyl, 1,1-dimethyl-2-(methylsulfinyl)ethyl, 1-methyl-2-(methylsulfonyl)ethyl or 1,1-dimethyl-2-(methylsulfonyl)ethyl,

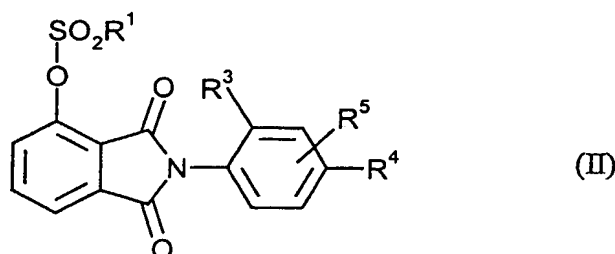
R^3 represents methyl,

R^4 represents perfluoroisopropyl, and

R^5 represents hydrogen atom.

5. A process for the preparation of the compounds of the formula (I) according to Claim 1, characterized in that

a) compounds of the formula (II)



wherein R^1 , R^3 , R^4 and R^5 have the same definitions as in Claim 1, are reacted with compounds of the formula (III)



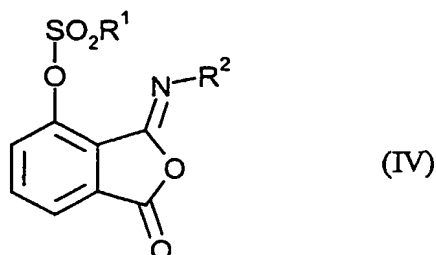
wherein R^2 has the same definition as in Claim 1,

in the presence of inert solvents, and if appropriate, in the presence of a base,

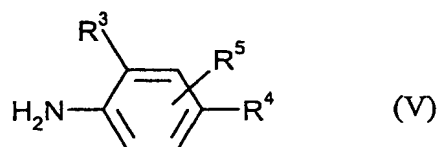
or

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b) compounds of the formula (IV)



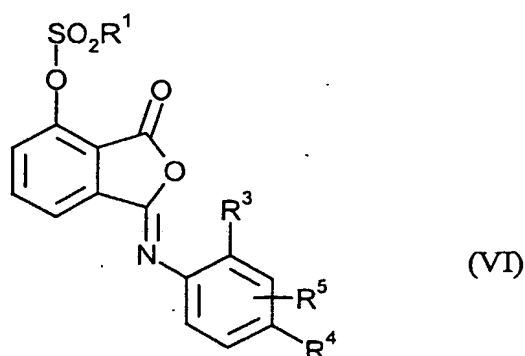
wherein R^1 and R^2 have the same definitions as in Claim 1,
are reacted with compounds of the formula (V)



wherein R^3 , R^4 and R^5 have the same definitions as in Claim 1,
in the presence of inert solvents, and if appropriate, in the presence of
an acid catalyst,

or

c) compounds of the formula (VI)



wherein R^1 , R^3 , R^4 and R^5 have the same definitions as in Claim 1,
are reacted with compounds of the formula (III),

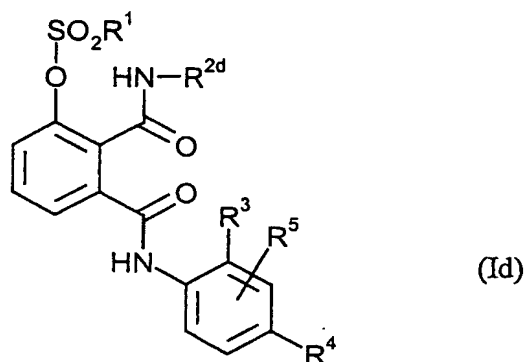


wherein R^2 has the same definition as in Claim 1,
in the presence of inert solvents, and if appropriate, in the presence of
a acid catalyst,

or

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- d) in case of preparing the compounds of the formula (I) in which R^2 represents alkylsulfinylalkyl or alkylsulfonylalkyl: compounds of the formula (Id)



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wherein

 R^{2d} represents alkylthioalkyl, R^1 , R^3 , R^4 and R^5 have the same definitions as in Claim 1,

are reacted with an oxidizing agent, in the presence of inert solvents.

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6. Insecticidal composition, characterized in that they contain at least one phthalamide derivatives of formula (I) according to Claim 1.

7. Process for combating insects, characterized in that phthalamide derivatives of the formula (I) according to claim 1 are allowed to act on insect and/or their habitat.

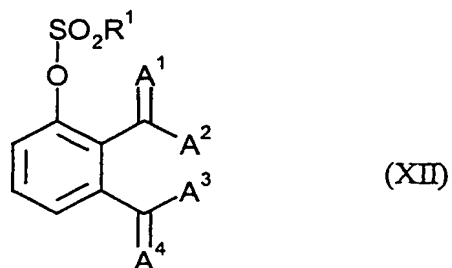
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8. Use of phthalamide derivatives of formula (I) according to Claim 1 for combating insects.

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9. Process for the preparation of insecticidal compositions, characterized in that phthalamide derivatives of the formula (I) according to Claim 1 are mixed with extenders and/or surface active agents.

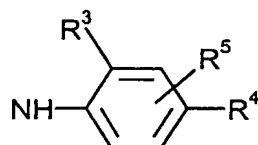
10. Phthalic acid derivatives of the formula (XII)



wherein

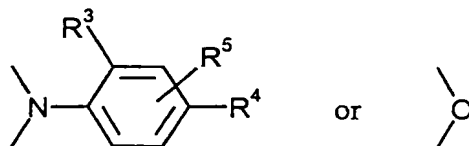
R^1 has the same definition as in any of Claims 1 to 4,

- (a) A^1 and A^4 each represents oxygen atom,
 A^2 represents the group $NH-R^2$ and A^3 represents hydroxy,
 or
 A^2 represents hydroxy and A^3 represents the group



or

A^2 , together with A^3 , represents a group selected from



or

- (b) A^1 represents the group $N-R^2$,
 A^2 , together with A^3 , represents the group



and

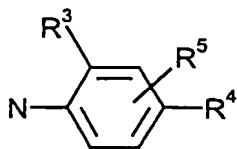
A^4 represents oxygen atom,

or

- (c) A^1 represents oxygen atom,
 A^2 , together with A^3 , represents the group

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and

 A^4 represents the group

wherein R², R³, R⁴ and R⁵ have the same definitions as in any of Claims 1 to 4.

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